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Mechanical Properties of the Sugarcane Bagasse Reinforced Polypropylene Composites

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Abstract : Natural fibers are used in polymer composites to improve mechanical properties, substituting inorganic reinforcing agents produced by non renewable resources. The present study investigates the tensile, flexural and impact behaviors of sugarcane bagasse fibers-polypropylene composite as a function of volume fraction. The surface of the fibers was modified by mercerization treatments to improve the wetting behavior of the apolar polypropylene. The treatment characterization was obtained by infrared spectroscopy and scanning electron microscopy. Results evidence that a good adhesion interfacial between fibers-matrix causing an increase strength and modulus flexural as well as impact strength in the modified fibers/PP composites when compared to the pure PP and unmodified fibers reinforced composites.

Keywords : sugarcane bagasse, polymer composites, mechanical properties, fibers
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